Engineering Mechanics Statics

EGN 2511 Section 27945
Class Periods: T 2-3 (8:30-10:10am) and R 3 (9:35-10:25am)
Location: FLG 230 on Tuesdays and NEB 202 on Thursdays
Academic Term: Fall 2025

Instructor:
Name: Kamran Mohseni
Email Address: mohseni@ufl.edu Please allow 48 hours for response. For problem solving, please first try to come to a grader or my office hours. It is not easy to write up equations over an email.
Office Hours Location: Thursdays 10:30am-12:30pm in room NEB 141 or via zoom. I am also available immediately after the lectures in the classroom on Tuesdays.

Teaching Assistant/Peer Mentor/Supervised Teaching Student:
Please contact through the Canvas website

- Anthony R. Alexander,
  Email: anthonyalexander@ufl.edu,
  Office location Online and in person in NEB 526,
  Office hours: 6-7pm on Tuesdays, 6-8pm on Wednesdays
- Amanda M. McKeel,
  Email: a.mckeel@ufl.edu
  Office location: Online and in person in NEB 526,
  Office hours: Wednesday 3-4pm.

Course Description
EGM2511 Engineering Mechanics: Statics, 3 Credits
Grading Scheme: Letter Grade
Topics: reduction of force systems, equilibrium of particles and rigid bodies, vector methods and their application to structures and mechanisms.

Course Pre-Requisites / Co-Requisites
Prerequisite: Physics with calculus I PHY 2048 ;
Corequisite: Analytic geometry and calculus III MAC 2313

Course Objectives
In this course the student will develop engineering problem solving methods through fundamental introductory topics in mechanics including: particle and rigid body equilibrium in 2D and 3D force systems, appropriate support reactions, moments of forces, equivalent systems, distributed forces, center of gravity, composite body and integration analysis methods, trusses, frames, machines, internal forces (including shear and bending moment diagrams), friction concepts, moment of inertia, parallel axis theorem, and mass moment of inertia.

This is a core course in the engineering curriculum. It stresses fundamental engineering science and mathematical principles required for a proper understanding of mechanics. Students will learn to use vector methods and free body diagram development as tools to logically approach and solve engineering mechanics problems in both the SI and U.S. customary systems.

Upon completion of this course students are expected to understand how to analyze practical engineering structures under force and moment systems and have a strong foundation of the engineering mechanics principles and methods needed for both use as qualified engineers and for secondary courses in mechanics.

Materials and Supply Fees
N/A

Relation to Program Outcomes (ABET):
EGM2511 supports program outcomes enumerated in the mission statements of various degree programs and engineering departments. The successful completion of this course will support desired student outcomes, including the design and realization of engineering systems. The course might be categorized as approximately Mathematics (10%), Physical Sciences (20%), Engineering Sciences (60%), and Engineering Design (10%).
This course achieves the following engineering accreditation outcomes:

- Ability to identify, formulate, and solve complex engineering problems
- Ability to apply engineering design to produce solutions that meet specified needs

Required Textbooks and Software

- Title: Engineering Mechanics: Statics, 15th ed.
- Author: R.C. Hibbeler
- Publisher: Pearson
- ISBN number: 0134814975, published in 2022

Recommended Materials
The following books cover similar topics, and one could learn the topic from them as well. However, I try to closely follow the order from Hibbeller's book.

- Title: Engineering Statics
- Author: Baker and Haynes
- This book is available for free at https://engineeringstatics.org/

- Title: Vector Mechanics for Engineers: Statics
- Author: Beer, Johnston, and Mazurek
- Publisher: McGrawHill
- Published on 2024
- ISBN number: 1266706526

Required Computer
Recommended Computer Specifications: https://it.ufl.edu/get-help/student-computer-recommendations/
HWCOE Computer Requirements: https://www.eng.ufl.edu/students/advising/fall-semester-checklist/computer-requirements/

Course Schedule
See Canvas Calendar for real-time updates to weekly subject matter.

Important Dates
These are tentative exam dates. Please pay attention to class announcements for any changes.

- Exam I: On October 14, 2025 at 8:30am in your classroom in FLG 230.
- Exam II: On December 3, 2025 at 8:30am in your classroom in FLG 230.

Please record these exam dates and do NOT miss them. There is no make-up exam except in rare emergencies with proper documentations and notice to Dr. Mohseni before the exam.

Evaluation of Grades

- Homework 10%
- Pop up Quizzes 25%
- Exam I 30%
- Exam II 35%

The lowest score for HW and lowest Quiz will be dropped to account for travel, scheduling conflicts and illness. Nothing beyond that, however.

Generalized Homework Grading Rubric:

10% for submitting a file (assignment submission)
10% for formatting and neatness (engineering professionalism)
60% for clear demonstration of effort and material understanding (process documentation)
20% for correct analysis (the answer)

Generalized Quiz Grading Rubric:
Points will be awarded on a per question basis with different question types represented in the quiz (multiple choice, true/false, numerical answer, file uploads, etc). Aggregate quiz grades will be the simple summation of correct answers achieved

As the assignment deadlines will be clearly posted on the course websites, late submissions past the deadline will not be accepted. There is no excuse for missed assignments, this is your responsibility to act like a professional student. Don't ask/beg for special treatment.

GRADE DISPUTES:
If a student feels that an exam or homework was graded unfairly, or if there is an error in the grading, it should be brought to the attention of the primary instructor within ***two weeks*** after the grades are posted for that assignment. Scores will not be reconsidered beyond the two-week period.

TA's and graders don't have authority to change grades unilaterally, so please don't ask them.

Grading Policy
The following is given as an example only.

Percent	Grade	Grade Points
93.4 - 100	A	4.00
90.0 - 93.3	A-	3.67
86.7 - 89.9	B+	3.33
83.4 - 86.6	B	3.00
80.0 - 83.3	B-	2.67
76.7 - 79.9	C+	2.33
73.4 - 76.6	C	2.00
70.0 - 73.3	C-	1.67
66.7 - 69.9	D+	1.33
63.4 - 66.6	D	1.00
60.0 - 63.3	D-	0.67
0 - 59.9	E	0.00

Attendance Policy, Class Expectations, and Make-Up Policy

1. Attendance: required. Class attendance will be regularly checked. Please follow the instructions in the classroom.
2. **This is not a recorded course.** Please do attend the lectures in the classroom.
3. **No cell phones** are allowed during the class time except for login to the attendance systems at the beginning of the lectures.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies. Click here to read the university attendance policies:
https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/

Make-up Policy: Late HW is not accepted. Makeup exams are not normally allowed except is extreme cases such as medical emergency. If you cannot attend an exam, you must contact the instructor prior to the exam with proper documentation (eg letter from a physician) for the reason. Arrangements will be made for students on a case-by-case basis and based on proper and justified documentation. Failure to contact the instructor prior to the exam will

result in a zero on that exam. Note that I do not reuse the same exam problems for someone who might take the exam later. You will be given a completely new set of exam problems.

Academic Policies & Resources

To support consistent and accessible communication of university-wide student resources, instructors must include this link to academic policies and campus resources: https://go.ufl.edu/syllabuspolicies. Instructor-specific guidelines for courses must accommodate these policies.

Commitment to a Positive Learning Environment

The Herbert Wertheim College of Engineering values varied perspectives and lived experiences within our community and is committed to supporting the University's core values.

If you feel like your performance in class is being impacted, please contact your instructor or any of the following:

- Your academic advisor or Undergraduate Coordinator
- HWCOE Human Resources, 352-392-0904, student-support-hr@eng.ufl.edu
- Pam Dickrell, Associate Dean of Student Affairs, 352-392-2177, pld@ufl.edu

Notes on Homework Sets and Their Solutions

Policies/Procedures:

1. Homework assignments are posted on the course website
2. Homework assignments are due at 11:55pm on Wednesday one week after assignment.
3. You are expected to return solutions to all requested problems. However, grading might be conducted only on selected problems.
4. Students are encouraged to discuss the general principles involved in the homework sets with one another, but the solution of each problem must be completed individually.
5. You are expected to scan your answers to the HW and upload them on the course website before the deadline.
6. Please do NOT leave uploading your answers to the last minutes. Give yourself plenty of time so your uploading is not affected by unexpected events (power loss, computer crash, internet loss, etc). The system will close at 11:55pm and will not accept uploading after that. **No late HW will be accepted.**

Format

1. Use Engineering 8.5" x 11" paper and write on one side. See the Engineering Paper Template on the course website.
2. Write down your name on the 1st page and on every subsequent pages. The naming format should be:
   First Name Last Name
3. Do not use pages torn from a spiral notebook. Use the
4. Start each problem on a new page.
5. Do not write on the back of each paper.
6. At the beginning of the problem solving briefly re-state the problem.
7. Write your plan of action, eg
   a. Decompose forces into components
   b. Add components and set equal to zero
   c. Solve for unknowns
8. Write neatly and legibly and make steps easy to follow.
9. Do not write very close to the margins.
10. Box your answers.
11. Put the problems in numerical order.
12. Attach a listing of any computer program(s) used in the solution.
13. Use good penmanship, as illegible writing cannot be graded.

HW Feedback

On top of the first page of your HW set please write:

- How many hours it took you to read and do the HW of that week.